

What Is Claimed Is:

1.(amended) An amphibious vehicle having armoured inflatable floating devices (AFIFDs) for providing additional buoyancy during swimming, which are  
5 mounted on both outer sides thereof, the amphibious vehicle comprising:

at least one wall closet-type connecting room corresponding to at least one connector protruding from a side of the AFIFD that contacts the amphibious vehicle in order to have the amphibious vehicle connected with the AFIFD each other, the wall closet-type connecting room and the connector of the AFIFD forming a sealed space by  
10 being connected correspondingly to the connectors of the AFIFD, the wall closet-type connecting room being sunken inwardly from the outer side surface of the amphibious vehicle and being a corresponding area of the amphibious vehicle for installing a driving means for carrying out folding and unfolding actions of the AFIFD, so that the wall closet-type connecting room is closed at the upper and lower sides, the right and left  
15 sides and the inner side thereof and opened at the outer side thereof.

2. The amphibious vehicle according to claim 1, wherein the inner side of the wall closet-type connecting room is made of sectional plates having sealing means.

20 3.(amended) An AFIFD mounted on an amphibious vehicle for providing additional buoyancy to the amphibious vehicle, the AFIFD comprising:

an inner plate attached to the outer side of the amphibious vehicle through at least one hinge and fixing means, the inner plate forming a first side surface of the AFIFD;

25 an upper armor plate connected to the upper end of the inner plate by hinges to form the top surface of the AFIFD;

an outer armor plate connected to the upper armor plate by hinges to form a second side surface of the AFIFD;

30 a lower armor plate connected to the lower end of the inner plate and the outer armor plate by hinges to form the bottom surface of the AFIFD;

a seal membrane for sealing gaps between two plates of the inner plate, the upper armor plate, the outer armor plate and the lower armor plate, the two plates being in contact with each other;

front and rear thimble-type rubber membranes respectively located on the front and rear parts of the AFIFD, wherein the outer circumferences surrounding the ends of the thimble-type rubber membranes are bonded to corresponding parts of the inner plate, the upper armor plate, the outer armor plate and the lower armor plate;

5 at least one connector mounted on the inner plate to provide air to the AFIFD;

front and rear armor plates respectively connected to both ends of the inner plate by hinges for protecting the front and rear thimble-type rubber membranes, the front and rear armor plates respectively forming the front and rear surfaces of the AFIFD; and

10 at least one driving means mounted between the upper armor plate and a corresponding part of the amphibious vehicle, the driving means carrying out folding and unfolding actions of the AFIFD,

wherein one or more ropes connected to the lower end of the outer armor plate and at least one means for controlling the ropes are additionally mounted at the corresponding connected portion of the amphibious vehicle,

15 wherein, when the amphibious vehicle swims in water, the upper armor plate, the outer armor plate and the lower armor plate are completely unfolded by the driving means and pneumatic pressure, so that a sealed floating space is formed inside the AFIFD by the inner plate, the upper armor plate, the outer armor plate, the lower armor plate, and the front and rear thimble-type rubber membranes,

20 wherein, when the amphibious vehicle does not swim in water, the upper armor plate, the outer armor plate and the lower armor plate are folded to the inner plate by the driving means and air suction and fixed by fixing means, and then the front and rear armor plates are closely folded and fixed to the folded upper armor plate, and

25 wherein the AFIFD is lifted up by the driving means after the fixing means fixing the inner plate of the AFIFD to the outer side of the amphibious vehicle are unfastened.

4.(amended) An AFIFD mounted on an amphibious vehicle for providing additional buoyancy to the amphibious vehicle, the AFIFD comprising:

30 an inner plate attached to the outer side of the amphibious vehicle through at least one hinge and fixing means, the inner plate forming a first side surface of the AFIFD;

an upper armor plate connected to the upper end of the inner plate by hinges to

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form the top surface of the AFIFD;

an outer armor plate connected to the upper armor plate by hinges to form a second side surface of the AFIFD;

5 a lower armor plate connected to the lower end of the inner plate and the outer armor plate by hinges to form the bottom surface of the AFIFD;

a rubber membrane bag having a sealed space which has a shape and a size suitable for the inner shape of the unfolded armor plates and at least one connector for providing air to the sealed space, the rubber membrane bag being partially bonded to main points of the armor plates to allow the folding and unfolding actions of the AFIFD;

10 front and rear armor plates respectively connected to both ends of the inner plate by hinges for protecting the front and rear parts of the rubber membrane bag, the front and rear armor plates respectively forming the front and rear surfaces of the AFIFD; and

15 at least one driving means mounted on the upper armor plate, the driving means carrying out folding and unfolding actions of the AFIFD,

wherein one or more ropes connected to the lower end of the outer armor plate and at least one means for controlling the ropes are additionally mounted at the corresponding connected portion of the amphibious vehicle,

20 wherein, when the amphibious vehicle swims in water, the upper armor plate, the outer armor plate and the lower armor plate are completely unfolded by the driving means and pneumatic pressure, so that a sealed floating space is formed inside the AFIFD by the rubber membrane bag,

25 wherein, when the amphibious vehicle does not swim in water, the upper armor plate, the outer armor plate and the lower armor plate, together with the deflated rubber membrane bag, are folded to the inner plate by the driving means and air suction and fixed by fixing means, and then the front and rear armor plates are closely folded and fixed to the folded upper armor plate, and

30 wherein the AFIFD is lifted up by the driving means after the fixing means fixing the inner plate of the AFIFD to the outer side of the amphibious vehicle are unfastened.

5.(amended) The AFIFD according to claim 4, wherein the lower armor plate is made of multiple strips longitudinally elongated and hinged with each other in a

bendable manner.

6.(amended) An AFIFD mounted on an amphibious vehicle for providing additional buoyancy to the amphibious vehicle, the AFIFD comprising:

5 an inner plate attached to the outer side of the amphibious vehicle through at least one hinge and fixing means, the inner plate forming a first side surface of the AFIFD;

an upper armor plate connected to the upper end of the inner plate by hinges to form the top surface of the AFIFD;

10 an outer armor plate connected to the upper armor plate by hinges to form a second side surface of the AFIFD;

a fabric membrane connected to the lower end of the inner plate and the lower end of the outer armor plate to form a lower side of the AFIFD;

15 a rubber membrane bag having a sealed space which has a shape and a size suitable for the inner shape of the unfolded armor plates and at least one connector for providing air to the sealed space, the rubber membrane bag being partially bonded to main points of the armor plates to allow the folding and unfolding actions of the AFIFD;

front and rear armor plates respectively connected to both ends of the inner plate by hinges for protecting the front and rear parts of the rubber membrane bag, the front and rear armor plates respectively forming the front and rear surfaces of the AFIFD; and

20 at least one driving means mounted on the upper armor plate, the driving means carrying out folding and unfolding actions of the AFIFD,

25 wherein one or more ropes connected to the lower end of the outer armor plate and at least one means for controlling the ropes are additionally mounted at the corresponding connected portion of the amphibious vehicle,

wherein, when the amphibious vehicle swims in water, the upper armor plate, the outer armor plate and the fabric membrane are completely unfolded by the driving means and pneumatic pressure, so that a sealed floating space is formed inside the AFIFD by the rubber membrane bag,

30 wherein, when the amphibious vehicle does not swim in water, the upper armor plate, the outer armor plate, and the fabric membrane, together with the deflated rubber membrane bag, are folded to the inner plate by the driving means and air suction and

fixed by fixing means, and then the front and rear armor plates are closely folded and fixed to the folded upper armor plate, and

wherein the AFIFD is lifted up by the driving means after the fixing means fixing the inner plate of the AFIFD to the outer side of the amphibious vehicle are  
5 unfastened.

7.(amended) An AFIFD mounted on an amphibious vehicle for providing additional buoyancy to the amphibious vehicle, the AFIFD comprising:

an inner plate attached to the outer side of the amphibious vehicle through at  
10 least one hinge and fixing means, the inner plate forming a first side surface of the AFIFD;

an upper armor plate connected to the upper end of the inner plate by hinges to form the top surface of the AFIFD;

at least one driving means mounted on the upper armor plate, the driving means  
15 carrying out folding and unfolding actions of the AFIFD;

an outer armor plate connected to the upper armor plate by hinges to form a second side surface of the AFIFD, wherein a portion of the outer armor plate is in the state of being cut, the cut portion being corresponding to a portion of the upper armor plate to which the driving means is attached in case that the outer armor plate is folded  
20 to the upper armor plate;

a fabric membrane connected to the lower end of the inner plate and the lower end of the outer armor plate to form a lower portion of the AFIFD;

a rubber membrane bag having a sealed space which has a shape and a size suitable for the inner shape of the unfolded armor plates and at least one connector for  
25 providing air to the sealed space, the rubber membrane bag being partially bonded to main points of the armor plates to allow the folding and unfolding actions of the AFIFD; and

front and rear armor plates respectively connected to both ends of the inner plate by hinges for protecting the front and rear thimble-type rubber membranes, the front and  
30 rear armor plates respectively forming the front and rear surfaces of the AFIFD,

wherein one or more ropes connected to the lower end of the outer armor plate and at least one means for controlling the ropes are additionally mounted at the corresponding connected portion of the amphibious vehicle,

wherein the AFIFD further comprises means for securing a space of the driving means by moving a part of the rubber membrane bag as the outer armor plate is folded to the inner plate, in order to secure the space of the driving means and to prevent interference between the driving means and the rubber membrane bag when the outer armor plate is folded,

wherein, when the amphibious vehicle swims in water, the upper armor plate, the outer armor plate and the fabric membrane are completely unfolded by the driving means and pneumatic pressure, so that a sealed floating space is formed inside the AFIFD by the rubber membrane bag,

wherein, when the amphibious vehicle does not swim in water, the upper armor plate, the outer armor plate and the fabric membrane, together with the deflated rubber membrane bag, are folded to the inner plate by the driving means and air suction and fixed by fixing means, and then the front and rear armor plates are closely folded and fixed to the folded upper armor plate, and

wherein the AFIFD is lifted up by the driving means after the fixing means fixing the inner plate of the AFIFD to the outer side of the amphibious vehicle are unfastened.

8.(amended) The AFIFD according to claim 6 or 7, wherein a fabric hardening portion is partially formed on the fabric membrane, the fabric hardening portion having a property of not being bent or broken in free condition in order to prevent the fabric membrane and the rubber membrane bag from being inserted into gaps of the AFIFD.

9.(amended) The AFIFD according to claim 7, wherein the means for securing a space of the driving means includes:

ropes for connecting right and left sides of the cut portion of the outer armor plate to the inner plate, respectively, each rope having a ring formed on the end connected with the outer armor plate; and

rope connecting members located at right and left sides of the cut portion of the outer armor plate, the rope connecting members allowing the rings to slide in direction that the rings becomes closer to the cut portion along the surface of the outer armor plate,

wherein the rings slide to the cut portion of the outer armor plate as the outer

armor plate is folded, so that a portion of the rubber membrane bag around the cut portion is pulled toward the cut portion so as to secure the space for the driving means.

10.(amended) An AFIFD mounted on an amphibious vehicle for providing  
5 additional buoyancy to the amphibious vehicle, the AFIFD comprising:

an inner plate attached to the outer side of the amphibious vehicle through at least one hinge and fixing means, the inner plate forming a first side surface of the AFIFD;

an upper armor plate connected to the upper end of the inner plate by hinges, the  
10 upper armor plate serving both as the top surface and the outer surface of the AFIFD by being slantedly unfolded;

a seal membrane for sealing between the inner plate and the upper armor plate being in contact with each other;

rubber membrane integrally forming the front, rear and lower surfaces of the  
15 AFIFD, in which portions contacting the inner plate and the upper armor plate are bonded with each plate respectively;

at least one connector mounted on the inner plate to provide air to the AFIFD;

front and rear armor plates respectively connected to both ends of the inner plate by hinges for protecting the front and rear surfaces of the rubber membrane, the front  
20 and rear armor plates respectively forming the front and rear surfaces of the AFIFD; and

at least one driving means mounted on the upper armor plate, the driving means carrying out folding and unfolding actions of the AFIFD,

wherein, when the amphibious vehicle swims in water, the upper armor plate is  
25 slantedly unfolded in a downward direction by the driving means and pneumatic pressure, so that the inner plate and the rubber membrane form a sealed floating space inside the AFIFD,

wherein, when the amphibious vehicle does not swim in water, the integrally formed rubber membrane is folded between the inner plate and the upper armor plate by  
30 the driving means and air suction and fixed by fixing means, and then the front and rear armor plates are closely folded and fixed to the folded upper armor plate, and

wherein the AFIFD is lifted up by the driving means after the fixing means fixing the inner plate of the AFIFD to the outer side of the amphibious vehicle are

unfastened.

11.(amended) An AFIFD mounted on an amphibious vehicle for providing additional buoyancy to the amphibious vehicle, the AFIFD comprising:

5 an inner plate attached to the outer side of the amphibious vehicle through at least one hinge and fixing means, the inner plate forming a first side surface of the AFIFD;

an upper armor plate connected to the upper end of the inner plate by hinges, the upper armor plate serving both as the top surface and the outer surface of the AFIFD by  
10 being slantedly unfolded;

a rubber membrane bag having a sealed space which has a shape and a size suitable for the inner shape of the unfolded armor plates and at least one connector for providing air to the sealed space, the rubber membrane bag being partially bonded to main points of the armor plates to allow the folding and unfolding actions of the AFIFD;

15 front and rear armor plates respectively connected to both ends of the inner plate by hinges for protecting the front and rear parts of the rubber membrane bag, the front and rear armor plates respectively forming the front and rear surfaces of the AFIFD; and

at least one driving means mounted on the upper armor plate, the driving means  
20 carrying out folding and unfolding actions of the AFIFD,

wherein, when the amphibious vehicle swims in water, the upper armor plate is slantedly unfolded in a downward direction by the driving means and pneumatic pressure, so that a sealed floating space is formed inside the AFIFD by the rubber membrane bag,

25 wherein, when the amphibious vehicle does not swim in water, the deflated rubber membrane bag is folded between the inner plate and the upper armor plate by the driving means and air suction and fixed by fixing means, and then the front and rear armor plates are closely folded and fixed to the folded upper armor plate, and

wherein the AFIFD is lifted up by the driving means after the fixing means fixing the inner plate of the AFIFD to the outer side of the amphibious vehicle are  
30 unfastened.

12.(amended) An AFIFD mounted on the front surface of an amphibious vehicle for providing additional buoyancy to the amphibious vehicle, the AFIFD



comprising:

a front armor plate having a lower end edge hinged to a nose portion of the front surface;

5 an upper armor plate hinged to an edge protruding in the form of an "L" shape on the upper end of the front armor plate;

inverted triangle-type left and right armor plates respectively hinged with protrusions on the left and right sides of the front armor plate, the protrusions being more protruding than the protruding edge of the upper end of the front armor plate;

10 a rubber membrane bag located within the space between the front armor plate and the upper armor plate and having a sealed space which has a shape and a size suitable for the inner shape of the unfolded armor plates and at least one connector for providing air to the sealed space, the rubber membrane bag being partially bonded to main points of the armor plates to allow the folding and unfolding actions of the AFIFD;

a driving means for operating the front armor plate;

15 an upper armor plate driving means mounted inside the rubber membrane bag, both ends of the driving means attached to the central and lower end of the front armor plate and the central and upper end of the upper armor plate respectively; and

at least one side plate driving means mounted on each side to operate the left and right armor plates.

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13. (amended) The AFIFD according to any one of claims 3 to 7, wherein the connector is an extensible connector, and both ends of the driving means are respectively mounted on the corresponding connected portion of the amphibious vehicle and the upper armor plate through the extensible connector.

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